Complete Summary

GUIDELINE TITLE

Guideline on the use of ipecac syrup in the out-of-hospital management of ingested poisons.

BIBLIOGRAPHIC SOURCE(S)

Manoguerra AS, Cobaugh DJ. Guideline on the use of ipecac syrup in the out-of-hospital management of ingested poisons. Clin Toxicol (Phila) 2005;43(1):1-10. [89 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Ingested poisons

GUIDELINE CATEGORY

Management
Treatment

CLINICAL SPECIALTY

Emergency Medicine
Family Practice

Internal Medicine
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Emergency Medical Technicians/Paramedics
Nurses
Pharmacists
Physicians

GUIDELINE OBJECTIVE(S)

To provide assistance to poison center personnel in planning the role of ipecac syrup in the out-of-hospital management of poisoned patients

TARGET POPULATION

Patients who have ingested poisons

INTERVENTIONS AND PRACTICES CONSIDERED

Ipecac syrup administration

MAJOR OUTCOMES CONSIDERED

- Effectiveness of ipecac syrup treatment:
  - Frequency and time to emesis
  - Amount of material removed by ipecac-induced emesis/drug absorption
  - Hospitalization rate
  - Clinical deterioration of patient
- Adverse events

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A search of the National Library of Medicine's MEDLINE database from 1966 through 2002 was conducted to identify articles related to this guideline. The Medical Subject Heading (MeSH) "ipecac" was used for the search; no limits were applied. Bibliographies from several tertiary references were also reviewed to identify articles that were not found through the MEDLINE search. These

references included Goldfrank's Toxicologic Emergencies, Clinical Management of Poisoning and Drug Overdose, Ellenhorn's Medical Toxicology, Clinical Toxicology, Poisoning and Drug Overdose, Emergency Toxicology, and Poisindex. The American Academy of Clinical Toxicology and European Association of Poisons Control Centres and Clinical Toxicologists Position Statement on Ipecac Syrup was reviewed to identify other references. Only English language articles were retrieved.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Articles were assigned level-of-evidence scores based on the Grades of Recommendation table developed by the Centre for Evidence-Based Medicine at Oxford University. Single case reports were classified along with case series as level 4.

Levels of Evidence	Description of Study Design
1a	Systematic review (with homogeneity) of randomized clinical trials
1b	Individual randomized clinical trials (with narrow confidence interval)
1c	All or none (all patients died before the drug became available, but some now survive on it; or when some patients died before the drug became available, but none now die on it)
2a	Systematic review (with homogeneity) of cohort studies
2b	Individual cohort study (including low quality randomized clinical trial)
2c	"Outcomes" research
3a	Systemic review (with homogeneity) of case-control studies
3b	Individual case-control study
4	Case series, single case reports (and poor quality cohort and case control studies)
5	Expert opinion without explicit critical appraisal or based on physiology or bench research
6	Abstracts

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Articles were categorized for review as efficacy studies, safety reports/studies, prevention program descriptions/studies, letters to the editor, selected general

reviews. Each article was reviewed and abstracted by the authors of the guideline. Literature evidence was scored using a system based on a slightly modified version of the levels of evidence developed by the Centre for Evidence-Based Medicine at Oxford University (see the "Rating Scheme for the Strength of the Evidence" field). Reviewed literature on the efficacy and safety of ipecac syrup-induced emesis with assigned levels of evidence is summarized in the evidence table created as part of this project. It is available electronically at http://www.aapcc.org/.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

An expert consensus panel was established to oversee the guideline development process (see Appendix 1 in the original guideline document). To serve on the expert consensus panel, an individual had to have an exceptional track record in clinical care and scientific research in toxicology, board certification as a clinical or medical toxicologist, significant U.S. poison center experience, and be an opinion leader with broad esteem. A Specialist in Poison Information was also included as panel member. The American Association of Poison Control Centers (AAPCC), the American Academy of Clinical Toxicology (AACT), and the American College of Medical Toxicology (ACMT) chose members of their organizations to serve as panel members.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

The rating scheme for the strength of the recommendation (A-D, Z) is directly tied to the level of evidence supporting the recommendation.

Grades of Recommendation	Levels of Evidence
A	1a
	1b
	1c
B	2a
	2b
	2c
	3a
	3b
C	4
D	5
Z	6

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

A draft guideline was prepared by the guideline authors. The draft was submitted to the consensus panel for comment. Comments from the consensus panel members were collected and addressed in a further revision of the guideline.

External review of the second draft was conducted by distributing it electronically to American Association of Poison Control Centers (AAPCC), American Academy of Clinical Toxicology (AACT), and American College of Medical Toxicology (ACMT) members and the secondary review panel. The secondary review panel consisted of representatives from the federal government, public health, emergency services, pediatrics, pharmacy practice, and consumer organizations (refer to Appendix 3 in the original guideline). Comments were submitted via a discussion thread on the public side of the AAPCC Web site or privately via email communication to AAPCC staff. All comments were reviewed by the consensus panel and, when appropriate, addressed in the document. Following a meeting of the consensus panel, a third and final revision of the document was prepared and approved by the panel.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Grades of recommendation (A-D, Z) and levels of evidence (1a-6) are defined at the end of the "Major Recommendations" field.

Summary of the Quality of the Evidence

1. Syrup of ipecac induces vomiting in almost all people to whom it is administered (Grade A evidence).
2. Ipecac-induced emesis decreases the gastrointestinal absorption of ingested substances although to varying, unpredictable extents (Grade A and B evidence).
3. The longer the interval between ingestion of the substance and the administration of ipecac syrup, the less the effect. This has been documented for a limited number of substances and the effectiveness in removing ingested materials declines rapidly with time and is substantially reduced after 30 to 90 minutes (Grade A, B and C evidence).
4. The effectiveness of ipecac syrup in affecting patient outcome has not been studied in adequate clinical trials (No evidence).
5. The rate of hospitalization of patients with moderate or severe poisonings in whom ipecac has been administered has not been studied (No evidence).
6. The use of ipecac syrup to induce vomiting is associated with uncommon, serious adverse effects (Grade C evidence).
7. Patients with eating disorders have abused ipecac syrup. This abuse has led to significant morbidity and mortality (Grade C evidence).

Conclusions of the Consensus Panel

The panel reached consensus that the circumstances in which ipecac-induced emesis is the appropriate or desired method of gastric decontamination are rare. The panel concluded that the use of ipecac syrup might have an acceptable benefit-to-risk ratio in rare situations in which:

- There is no contraindication to the use of ipecac syrup; and
- There is substantial risk of serious toxicity to the victim; and
- There is no alternative therapy available or effective to decrease gastrointestinal absorption (e.g., activated charcoal); and
- There will be a delay of greater than 1 hour before the patient will arrive at an emergency medical facility and ipecac syrup can be administered within 30 to 90 minutes of the ingestion; and
- Ipecac syrup administration will not adversely affect more definitive treatment that might be provided at a hospital.

In such circumstances, the administration of ipecac syrup should occur only in response to a specific recommendation from a poison center, emergency department physician, or other qualified medical personnel.

The panel decided not to address the issue of whether ipecac should remain a nonprescription, over-the-counter product. The panel does not support the routine stocking of ipecac in all households with young children but was unable to reach consensus on which households with young children might benefit from stocking ipecac. Instead, the panel concluded that individual practitioners and poison control centers are best able to determine the particular patient population, geographic, and other variables that might influence the decision to recommend having ipecac on hand.

Definitions:

Grades of Recommendation and Levels of Evidence

Grades of Recommendation	Levels of Evidence	Description of Study Design
A	1a	Systematic review (with homogeneity) of randomized clinical trials
	1b	Individual randomized clinical trials (with narrow confidence interval)
	1c	All or none (all patients died before the drug became available, but some now survive on it; or when some patients died before the drug became available, but none now die on it.)
B	2a	Systematic review (with homogeneity) of cohort studies
	2b	Individual cohort study (including low quality randomized clinical trial)
	2c	"Outcomes" research
	3a	Systemic review (with homogeneity) of case-control studies

Grades of Recommendation	Levels of Evidence	Description of Study Design
	3b	Individual case-control study
C	4	Case series, single case reports (and poor quality cohort and case control studies)
D	5	Expert opinion without explicit critical appraisal or based on physiology or bench research
Z	6	Abstracts

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The evidence supporting the conclusions of the consensus panel is identified and graded (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate use of ipecac syrup in cases of ingested poisons

POTENTIAL HARMS

Adverse Effects of Ipecac Syrup

- Adverse effects of ipecac syrup include hyperemesis, diarrhea, orthostatic hypotension, lethargy, irritability/hyperactivity, fever, diaphoresis, and potential risk of pulmonary aspiration of gastric contents.
- Refer to the "Ipecac Syrup Safety" section in the original guideline document for more information.

CONTRAINDICATIONS

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The U.S. Food and Drug Administration approved warnings for the labeling of ipecac syrup are:

- Do not use in persons who are not fully conscious.
- Do not use this product unless directed by a health professional. Do not use if turpentine, corrosives, such as alkalies (lye), strong acids, or petroleum distillates, such as kerosene, paint thinner, cleaning fluid, or furniture polish have been ingested.

Clinicians have expanded the contraindications for ipecac syrup to include situations in which:

- The patient is comatose or has altered mental status and the risk of aspiration of stomach contents is high.
- The patient is having convulsions.
- The substance ingested is capable of causing altered mental status or convulsions.
- The substance ingested is a caustic or corrosive agent.
- The substance ingested is a low viscosity petroleum distillate with the potential for pulmonary aspiration and the development of chemical pneumonitis.
- The patient has a medical condition that may be exacerbated by vomiting (e.g., severe hypertension, bradycardia, hemorrhagic diathesis).

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The effectiveness of ipecac syrup in affecting patient outcome has not been studied in adequate clinical trials. Its effectiveness in preventing drug absorption has only been documented for a limited number of substances.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Manoguerra AS, Cobaugh DJ. Guideline on the use of ipecac syrup in the out-of-hospital management of ingested poisons. Clin Toxicol (Phila) 2005;43(1):1-10. [89 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004

GUIDELINE DEVELOPER(S)

American Association of Poison Control Centers

SOURCE(S) OF FUNDING

Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services

GUIDELINE COMMITTEE

Guidelines for the Management of Poisonings Consensus Panel

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American Association of Poison Control Centers Web site.

Print copies: Available from the American Association of Poison Control Centers, 3201 New Mexico Avenue NW, Suite 330, Washington, DC 20016

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on October 27, 2005. The information was verified by the guideline developer on November 28, 2005.

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